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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/728,427      | 12/01/2000  | Chun-Byung Yang      | 5333-01300          | 6080             |

7590 03/26/2003

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EXAMINER

BROWN, JENNINE M

| ART UNIT | PAPER NUMBER |
|----------|--------------|
|----------|--------------|

1755

DATE MAILED: 03/26/2003

6

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Applicati n N .

09/728,427

Applicant(s)

YANG ET AL.

Examiner

Jennine M. Brown

Art Unit

1755

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-32 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-2, 4-7, 9-18, 20-32 are rejected under 35 U.S.C. 102(b) as being anticipated by Menon, et al. (US 5346872).

Menon, et al. teach an ethylene catalyst (col. 9, l. 34-36) having a magnesium dihydroxycarbyloxiide (prepared from reacting Mg with an alcohol) (col. 3, l. 53-59; col. 5, l. 9 – col. 6, l. 10) followed by a titanium compound (col. 3, l. 59-64; col. 8, l. 1-50) and/or vanadium compound (col. 3, l. 59-64; col. 7, l. 42-68) and/or silica compound. (col. 2, l. 34 – col. 9, l. 40) Halogenated titanium (col. 3, l. 65 – col. 4, l. 2), vanadium compound (col. 4, l. 3-8) are reacted with a halosilane (col. 4, l. 9-28; col. 6, l. 49-68; col. 8, l. 67 – col. 9, l. 10) and optionally with an aluminum compound, particularly a haloaluminum compound (col. 4, l. 13-15; col. 6, l. 49-68) or alkylaluminum compound (col. 8, l. 57-66).

Claims 1-7, 9-32 are rejected under 35 U.S.C. 102(b) as being anticipated by Klimek, et al. (US 5587436).

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Klimek, et al. teach an ethylene catalyst (col. 3, l. 14-16) having a magnesium dihydroxycarbyloxiide (prepared from reacting Mg with an alcohol) (col. 5, l. 36-44) followed by a titanium compound (col. 5, l. 17-35; col. 6, l. 17-42; col. 6, l. 43 – col. 7, l. 2; Example in col. 10) and/or vanadium compound (col. 7, l. 45 – col. 8, l. 27) and/or silica compound, particularly a silica halide or hydrocarbyloxiide silica (col. 7, l. 3-44; col. 8, l. 31-37) with an organophosphorus complex. (col. col. 5, l. 9 – col. 17; example; col. 14, l. 10 – col. 18, l. 16) Electron donors like triphenylphosphine oxide are cited (col. 5, l. 45-57). Organoaluminum cocatalyst like alkylaluminum halide is cited (col. 5, l. 58 – col. 6, l. 2). Activators and or modifiers are cited like boron halides (col. 6, l. 3-16).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Klimek, et al. (US 5587436) in view of Yang, et al. (US 6034025).

Klimek, et al teach a catalyst composition and method as described previously but do not specifically teach molar ratios of titanium and silicon to halogenated magnesium. Yang, et al. teach a catalyst composition and method of making and teach ratios of catalyst and co catalytic compositions (col. 4, l. 60 – col. 5, l. 6; col. 7, l. 2-14).

It would have been obvious to one of ordinary skill in the art to modify the composition of supported titanium to magnesium because this catalyst and co catalyst ratio would be important in changing properties of the polymer desired as well as the efficiency of the catalyst and ability to keep from agglomerating while polymerization occurs.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennine M. Brown whose telephone number is (703) 305-0435. The examiner can normally be reached on M-F 8:00 AM - 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Bell can be reached on (703) 308-3823. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 879-9310 for regular communications and (703) 872-9311 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

jmb  
March 17, 2003

  
**Mark L. Bell**  
**Supervisory Patent Examiner**  
**Technology Center 1700**